**DOCUMENT RESUME**

**ED 184 707** **PS 011 349**

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TITLE Children's Comprehension of Teachers' Directives: Effects of Development, Clarity and Context.
PUB DATE Apr 80
NOTE 30p.; Paper presented at the Annual Meeting of the American Educational Research Association (Boston, MA, April 7-11, 1980).

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Age Differences; *Children; *Classroom Communication; *Cognitive Development; *Comprehension; Context Clues; Elementary Education; *Teacher Behavior; Verbal Communication
IDENTIFIERS *Directives; *Speech Acts

ABSTRACT

This study analyzed children's comprehension of teacher directives at three levels of clarity. A total of 64 subjects, ages 5 1/2, 7 1/2, 9 1/2 and 11 1/2, participated. Photographic slides of teacher-pupil directive interactions paired with tape recorded teacher directives were presented to subjects under one of four levels of verbal context: Low, Physical, Classroom Norm, and High. There were significant effects for context and significant trends for clarity and for age. Children aged 9 1/2 utilized physical context more than norms, while 11 1/2 year olds used norms more. The evidence suggests that complex processes underlie children's manifest responses to teachers' directives. Children apparently do not possess comprehension skills as sophisticated as those of adults. Therefore when evaluating a child's behavior with respect to teacher directives, educators and psychologists should consider the clarity of the directive and the salience of the supporting context. (Author/RH)

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# CHILDREN'S COMPREHENSION OF TEACHERS' DIRECTIVES: EFFECTS OF DEVELOPMENT, CLARITY AND CONTEXT

by

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PS011349

Paper presented at the Annual Meeting of the American Educational Research Association (AERA), Boston, Mass., April 1980.

# Children's Comprehension of Teachers' Directives: Effects of Development, Clarity and Context

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ABSTRACT

This study analyzed children's comprehension of teacher directives at three levels of clarity. 64 Ss ages 5½, 7½, 9½ and 11½ participated. Photographic slides of teacher-pupil directive interactions paired with tape recorded teacher directives were presented under one of four levels of verbal context: Low, Physical, Classroom Norm, and High. There were significant effects for context and significant trends for clarity and for age. Most interestingly, 9½ year olds utilized physical context more than norms while 11½ year olds used norms more. The evidence suggests that complex processes underlie children's manifest responses to teachers' directives.

Introduction

The purpose of this study was to analyze children's comprehension of teachers' directives when those directives are controlled for clarity and presented under one of four levels of verbal context. It was hypothesized that developmental changes as indexed by age, directive clarity, and accompanying verbal context would each prove separately beneficial in improving scores on a directives comprehension task; but that higher order interactions involving all three variables would emerge such that children at different ages utilize different forms of information when interpreting teacher directives. The hypothesized interactions would provide evidence, as some have suggested, that differing cognitive abilities underlie semantic interpretation at different ages (e.g., Cometa & Eson, 1978; Edmonds, 1976; Eson, 1977).

Directives are speech acts in which the intentions of the speaker are to get the hearer to do something (Searle, 1976). Directives can be direct when the propositional content of the utterance matches the speaker's intentions ("Shut the door, Fred!") or indirect when the speaker's intentions are uttered in other than command form ("I wish you would shut the door, Fred!"). At the same time directives can also be clear when they specify the agent who is to perform the action and the action to be performed as in the previous two examples, or they can vary in clarity when the agent and/or action are ellided by the speaker ("There's a draft in here"). Ervin-Tripp (1976), Searle (1975), Bruck (Note 1) and others have discussed directive speech acts and have developed criteria for judging both directness and clarity among these utterances. For the present study the focus will be on directive clarity, and the contexts in which teacher directives might be uttered. The following section elaborates.

Variable Definitions

Directive clarity level. Ervin-Tripp (1976) states that a directive is unclear if some of the important pieces of directive information have been left out of the utterance. She claims that when such information is ellided, it requires the hearer to look elsewhere for assistance in filling in the gaps. She has suggested that hearers use the immediate context plus knowledge of the social norms governing directive interchanges to decide what is being requested. Similar notions have been suggested by Searle (1975), Morgan (1977), and Schlesinger (1977), while Bates (1976) suggests that for children certain cognitive prerequisites precede the search for missing information. According to Ervin-Tripp (1976) the most unclear directives are those in which none of the relevant components are mentioned. Bruck (Note 1) has implied that Ervin-Tripp's criterion is too strong, in that informational components may be missing from the utterance but provided so clearly by the context that the utterance should still be considered "clear". She prefers the term "explicit" when referring to those directives in which the agent and action are mentioned.

For the present research three levels of directive clarity were investigated: clear directives were those where the agent and action were clearly specified in the utterance. Also included in this level were those directives in which the agent has been conventionalized as being omitted from the directive as in many academic questions. (When did Columbus land in the Western hemisphere? is equivalent to saying, A person in this class should tell me when Columbus landed in the Western hemisphere). Unclear directives were those in which neither the agent nor the action were mentioned. Included in this level were those utterances in which a person or people were speicified by means

of group designations or indefinite pronouns ("Girls!!"; "I'd like some quiet in this class, everyone!"). Middle clarity directives were those in which either the agent or action were present in the utterance but not both.

Context. It has been suggested by numerous authors that one of the pragmatic features immediately surrounding an utterance is the context which is used by hearers to help them retrieve the speaker's intentions (e.g., Schlesinger, 1977; Garnica, 1975). One problem facing those who wish to study the role of context in the comprehension of utterances, is that no one has yet stated precisely what the "context" includes. Authors who discuss the concept of context often refer to features of the immediate perceptual field and/or social cues related to the current discourse (i.e., Cicourel, 1973; Ervin-Tripp, 1976; Schlesinger, 1977)

It was assumed for this study that no directive can ever be entirely without context. For one thing there is always the linguistic context itself that is defined by the syntax and semantic features chosen by the speaker to convey his/her intentions. For another there are always culturally based norms operating, that children learn quite early and that are probably always involved in the interpretation of any event (Cicourel, 1973). However, it is plausible to think of levels of context that can be added or taken away from an utterance and that are operationalized in terms of what previous research has shown to be useful to a hearer. In addition, the constraints of a controlled laboratory setting require that contexts selected for studied simulate, as closely as possible, those contexts in which similar utterances occur in natural discourse.

For this experimental study four levels of context were studied in relation to teacher directives uttered in those contexts. In the low context condition (LC) stimuli were presented while the subjects

were told only that the directive interaction is occurring in a school and that the participants are teachers and pupils. In an explicit physical context (EP) subjects were told the information from the LC condition but also of some of the perceptual or physical aspects of the context to which the directive applies (e.g.,someone left a chair sticking out from their table; one child is talking and laughing with a friend). In an explicit norm condition (EN) subjects were given the information in the LC condition but were also told a specific classroom norm to which the directive applies (e.g., when the teacher gives the signal the children are to make an "X" on the answer; children are supposed to push their chairs up to the table). Finally, in a high context condition (HC) subjects were given all three pieces of information. It is assumed that all four conditions sometimes occur in natural settings. While all types of information are theoretically available for hearers to use in disambiguating utterances, children in particular may attend only to certain features of the context and not others. Furthermore the inherent clarity of the utterance as well as the child's own level of development should influence what aspects of the context are utilized.

Development. Several theorists have mentioned the importance of the development of cognitive abilities in enabling a child to utilize linguistic structures and rules (Bates, 1976; Cometa & Eson, 1978; Piaget & Inhelder, 1969; Ervin-Tripp, 1977). In an investigation of children's directive comprehension that is concurrent with the present study (Shapiro, forthcoming) several specific developmental abilities have been studied in relation to directives comprehension. Social cognition of rules of politeness, hierarchical classification skills, logical inferential ability, and role-taking/communication skills have all been found to be related to directives comprehension.

However, each assessed skill has also been found to be highly correlated with age, therefore, for the present research age has been used as an index of development. It is expected that very young children would do poorly on a directives comprehension task relative to older children, but that clarity and context provide clues which greatly improve the young child's performance. For older children results are expected to be far more complex; Seven year olds are expected to perform dramatically better than five year olds with only small improvements in comprehension for nine and eleven year olds. The resulting trend should form a linear and quadratic polynomial. Such a result would be predicted by Bates (1976) who posits the acquisition of directives competence by the end of the pre-operational period and the beginning of the concrete operational period. Nine year olds, who are presumed to be concrete operators should find concrete aspects of the context most useful in directives interpretation, while eleven year olds who are expected to be at the beginning of the formal operational period should find norms more useful. This should be so if theories such as those of Piaget and Inhelder (1969) are generally valid. The assumption here is that physical aspects of the scene are more concrete, while classroom norms are more abstract and overarching. Furthermore, if there are, as some have suggested, orders of acquisition for certain skills which underlie language comprehension (Bates, 1976; Cometa & Eson, 1978), then a pattern of comprehension should emerge such that no "difficult" directives comprehension task should be mastered before its adjacent "easier" tasks.

## Related Research

There has been increasing interest recently in teacher-pupil directive interactions as they occur in natural contexts (Bruck, Note 1; Mehan, 1979; Shapiro, 1978, 1979; Sinclair & Coulthard, 1975). These

studies have provided evidence that: a) directives are ubiquitous and frequent teacher utterances, b) teachers vary directive types and clarity levels as a function of the activity underway, the age, sex, and perceived abilities of the pupils, and the time of the school year, and c) there are stable relationships among teacher directives, child responses, and subsequent teacher reactions.

While these observational studies have provided useful knowledge about the phenomenon of directives interactions in ongoing classroom discourse, they have been deficient in at least two ways: Firstly, the observers, not being privy to the teacher's actual intentions in uttering the directive, must infer the teacher's meaning in order to judge the appropriateness of the child's response. This task becomes highly inferential when teachers' directives are indirect and/or unclear. Secondly, the manifest child response must be assumed to be the end product of internal interpretive processes. There may be a number of cognitive routes leading a child to an appropriate (or inappropriate) response. The form of a child's response, while of interest as a datum within an interactive sequence, can tell us nothing about the cognitive processes which precede the behavior. Furthermore, as Ervin-Tripp (1977) has pointed out, lack of response on the child's part is no indication that the child was or was not processing the directive.

Some attempts have been made to investigate directives comprehension under experimental control. Clark and Lucy (1975) were concerned with the hearer's ability to interpret the "conveyed meaning" rather than the literal meaning of certain utterances. The authors hypothesized that in order to comprehend the conveyed meaning of a sentence such as "Must you open the door?", the hearer first constructs the literal meaning then checks the context for the plausibility of the statement. The cognitive processes should require time, so

23 subjects were timed as they attempted to interpret 10 different pairs of "conversationally" conveyed requests. The authors predicted that whenever the intended meaning of an utterance was different from its literal meaning, the listener should take longer to comprehend the statement. Subjects were presented with displays consisting of a sentence on the left (e.g., Can you color the circle blue?) and a circle colored either pink or blue on the right. Subjects were to judge whether the circle was colored according to the directive.

Clark an Lucy found that true was easier than false for the 10 positive requests, false was easier than true for the 10 negative requests and in general the positive requests were comprehended faster than the negative requests. While experimental studies such as this are useful for isolating certain linguistic phenomena, there are several problems with it. First of all the study is not about <u>conversationally conveyed</u> requests, despite the authors' assertaions. Ervin-Tripp (1976), Bates (1976) and a number of others have stressed the importance of pragmatic features in aiding the hearer in interpreting utterances in actual discourse. This study required that subjects read statements, not respond to them in natural contexts. Futhermore, the authors concentrate only on those aspects of the statements that mark them as either negative or postive, as if that feature were all that contributed to the indirectness of a directive. It is not known from this study what processing strategies hearers must use for spoken utterances in known contexts when they have available the speaker's intonations, prior knowledge, and perceptual cues.

Shatz (1975) presented indirect, but conventional, directives of the form "Can you..." plus action to two year olds. In this study the speaker's intentions were controlled by pre-determining the appropriate child response under one of two possible interpretations: that the utterance was either a directive to act or a request for information.

Shatz found that in most cases the very young child will respond with an action if an action is physically possible at the time. Even when she presented the directive in a context which would bias an adult listener to respond with information, most young children produced an action response. Shatz suggested that the indirect form of the directive (the form is known as a question directive in Ervin-Tripp's (1976) category system) was less relevant to the child than the concrete contents of the end of the utterance: Can you...shut the door?

Ackerman (1978) recently conducted an experimental study of children's comprehension of indirect directives that were unconventional. He presented first and third graders and adults with unconventional, indirect directives which were imbedded in two kinds of verbal context: one biasing a literal interpretation of the utterance or one biasing an inferential interpretation. The verbal context, in the form of brief stories, was read to the subjects with unstressed neutral intonation. Subjects then had to respond yes or no to three post questions that named what the character in the story would do next. Ackerman found that both third graders and adults utilized the verbally supplied context in both the literal condition and in the inferential condition, while first graders did not. However, in a second experiment the author found that first graders recalled the directive intentions of an utterance indicating that their memory responses were affected by the context.

Both Ackerman and Shatz have made useful contributions to our knowledge of directives comprehension, however neither study has addressed the very realistic problem of the school child's task in interpreting a teacher's intentions. Shatz's study concerned very young children interpreting a narrowly defined type of directive, while Ackerman's directives were read to Ss and were quite artificial in their propositional content. Furthermore, while Ackerman used

school age subjects in a school setting, the directives paragraphs were not school related. Both Shatz and Ackerman went to some pains to provide only neutral intonation. Presumably they hoped to study the effects of the verbally supplied contexts in isolation. However, Ervin-Tripp (1976), Schlesinger (1977) and others point out that no directive can be considered only on the basis of syntax and semantic content alone. In natural discourse intonation, as well as other paralinguistic features are a part of the inherent context within the utterance itself.

The present study was designed to overcome some of the flaws of previous investigations. The study focused on children's comprehension of genuine teacher directives, rather than arbitrary utterances, which were controlled for clarity and presented under four levels of context in order to determine what aspects of the utterances and their contexts were utilized by subjects of four ages in interpreting those utterances. It was expected that different levels of clarity and context would be differentially useful to Ss at each age as evidence that different cognitive processes underlie the child's manifest response to a teacher directive.

## Method

Subjects. Sixty-four subjects, 16 in each of four age groups participated. Mean ages for each group were 5.45 (S.D.=.1897); 7.54 (S.D.=.3794; 9.59 (S.D.=.3021); and 11.53 (S.D.=.2553). Ss groups will heretofore be referred to as the 5½, 7½, 9½, and 11½ year old groups. Half of the subjects were male and half were female. Participants were students in a large elementary school in southern New York State. The children were predominantly middle class and were free of obvious handicaps.

Design. A 4(age) X 4(context level) X 3(clarity level) factorial design was used with repeated measures on the clarity factor. The four levels of context are: Low Context (LC), Explicit Physical Context (EP), Explicit Norm Context (EN), and High Context (HC). The three levels of clarity are: Clear, Middle and Unclear.

Materials. Four randomized lists were prepared (see sample of List #1 in Appendix) of 18 directives each selected from 127 genuine teacher directives collected during observational studies in the experimental school the previous year. Each list contained six directives at each

level of clarity randomly assigned to list position. Lists were color coded to match instructions at four levels of context. Lists were then paired with photographic color slides of teachers and students at all elementary grade levels interacting in appropriate ways. Directives were recorded by female research assistants and presented with appropriate intonation via cassette tape.

Procedure. Subjects were brought to the testing room individually and were seated before a screen next to a table. Nearest to the subject on the table was a cassette tape recorder. Next to the tape recorder, in view of the subject but not obviously so, were three papers: the subject's answer sheet with answer blanks exposed; placed on top of this was a model answer sheet with the appropriate responses written out for each item; placed on top of this was a set of verbal context instructions for each item color coded to the subject's randomly assigned context level. After a brief get-acquainted period subjects were presented with slides and recorded directives for two training items. Two slides were projected on the screen at once and remained in view for the duration of each item. The examiner read the verbal context level instructions then activated the tape recorder. Subjects heard the teacher directive uttered twice. They were then asked "What is supposed to happen next?". When the examiner was convinced that the subject understood that s/he was to supply the child's response to the teacher directive, the 18 test items were presented. Timing for each directive and slide pair varied. The procedure took approximately 20 minutes for each subject. Subjects' responses were compared with the model answers and were marked either right or wrong. Scores ranged from 0-6 for each level of clarity. (see Appendix)

Analysis. The scores were analyzed by means of specific orthogonal contrasts, involving individual F-tests, compairing the obtained means to dummy variables representing the contrasts of interest. The method utilizes regression techniques evaluating the relationship between the variable representing the contrast and the obtained scores. The resulting correlation, when squared, represents the portion of variance "explained" by the selected contrast variable. The ratio of this predictable portion to the unpredictable portion is analogous to the ordinary mean squares ratio of the omnibus F-test, however in this case only those specific selected contrasts need be tested. Power is increased by allocating degrees of freedom for the "unused" contrasts to the error term. Dependent measures were also selected by means of dummy variables, one representing total directives comprehension score and one representing a linear trend for clarity.*

Three contrasts were repeated for each of these two dependent measures: Linear and Quadratic trends for age; High Context vs. Low Context effects; and interactions between age and context with respect to 9½ and 11½ year olds' performances under Explicit Physical and Explicit Norm contexts. A separate contrast involved a Linear trend for levels of clarity with groups rather than subjects as the unit of analysis. Since clarity was the repeated measures factor the 16 group means for each clarity level were treated as scores.

*I am indebted to Dr. Robert M. Pruzek for suggesting and clarifying this methodology. A conceptually related paper (Pruzek, 1979) discusses a correlational approach to ANOVA designs. Discussion of orthogonal contrasts is presented in Keppel (1973).

## Results

Patterns of means. Means for each age group, context level and clarity level are presented in Table 1. Grand means for each variable are graphed in Figure 1. There were significant main effects for each variable, as predicted. Results of the orthogonal contrasts are presented in Table 3. There was a significant linear and quadratic trend for age ($F_{1,60}=29.14$, $p<.001$) indicating that 7½ year olds perform dramatically better than 5½ year olds on a directives comprehension task. 9½ and 11½ year olds also improve relative to 7½ year olds but this improvement is small and gradual. The result suggests that directives interpretation improves during the same developmental period in which child thinking is known to undergo qualitative changes (Bates, 1976; Flavell et al., 1968).

There was a significant linear trend for clarity level ($F_{1,14}=9.10$, $p<.01$) with unclear directives most difficult to comprehend, middle clarity directives somewhat easier to comprehend, and, clear directives easiest to comprehend. This result transcended both age level and context level indicating that differences in directives comprehension can be partly attributed to the clarity of the utterance itself. There was also a significant effect for context condition ($F_{1,60}=21.97$, $p<.001$) with directives under high context conditions much easier to comprehend than directives under low context conditions.

For a subject to be considered as "doing well" on these tasks it was assumed that they would have to respond appropriately to more than half the directives within each level of clarity. The pattern of these higher means is presented in Table 2. 5½ year olds performed poorly on all tasks except for those directives that were clear and presented under EN or HC conditions. 7½ year olds performed well on middle clarity directives, except under HC conditions. They also comprehended clear directives under all context conditons. 9½ and 11½ year olds were

able to respond appropriately to some unclear directives, with strong contextual support which was also true for middle clarity directives. For all age groups clear directives were comprehended with the least context. The pattern reveals that only in one case was any "difficult" directive comprehended before its adjacent easier counterparts. This anomoly occurred for 7½ year olds who were apparently able to respond appropriately to middle clarity directives under low context conditions, although their performance for these directives under high context conditions was poor. 7½ year olds also out-performed 9½ and 11½ year olds in this respect. With the exception of this anaomoly, the pattern supports the contention that certain skills must be present prior to the acquisition of other, more demanding skills.

Higher order interactions. The expectation that the two middle levels of context would prove differentially useful for 9½ and 11½ year olds received small, but significant, support ($F_{1,60}=5.17$, $p<.05$). Figure 2 presents the pattern of means for each age group under each level of context. Apparently for 5½ year olds and 7½ year olds additional context merely constituted undifferentiated "more" information. For older subjects the pattern of means is more complex: 9½ year olds performed better on directives presented under physical context information, but poorly on directives presented under norm context. This pattern was counter to overall performance for all age groups where EN context directives were somewhat easier to comprehend than EP context.

The pattern for 11½ year olds is the reverse of that for 9½ year olds. EN conditions made directives easier for 11½ year olds while EP conditions did not aide comprehension as much. The interaction is more dramatic when analyzed for each level of clarity separately. Figure 3 reveals that the interaction was most pronounced for unclear directives, less pronounced for middle clarity directives, and least pronounced

for clear directives. A separate test for interaction of age with context for unclear directives alone yielded an F-value of 8.91 (df=14, $p < .01$) indicating that performance on unclear directives contributed most to the overall significant F for the age X context interaction.

Discussion

Previous experimental investigations of directives comprehension have attempted to isolate and analyze the effects of only one class of variables - those within the utterance itself (i.e., Clark & Lucy, 1975); or those within the context (i.e., Ackerman, 1978; Shatz, 1975). The present research attempted to examine the effects of three classes of variables, both separately and as they interact; development, clarity and context. It was hypothesized that each variable alone contributes to some improvement in children's comprehension of teacher directives, but that higher order interactions would reveal complex differences in the way children of different age groups process directives. Teacher directives were selected because it was found in earlier observational studies that directives are frequent and ubiquitous in classrooms; and that teachers do vary directives by type and clarity level. Therefore, a very realistic problem for children at every grade level is the appropriate interpretation of teacher directives.

Children from four age groups - 5½, 7½, 9½ and 11½ year olds - were presented with teacher directives of three levels of clarity, under one of four levels of verbal context. As predicted, age, clarity and context were separately beneficial for improving directives comprehension. Improvements with age followed a pattern established in previous literature which suggests that important changes in interpretive abilities occur around age 7 for most children (cf. Piaget & Inhelder, 1969). In addition, improvements for clarity and context occurred as might be intuitively predicted; higher levels of clarity contributed to

better comprehension as did high context relative to low context.

Bates (1976) has posited a developmental sequence in directives production for children in the preoperational period. By extrapolation Bates' model could be extended horizontally to the comprehension process and vertically to both the concrete operational and formal operational periods. While these extensions of the model are highly speculative, they provide a framework for looking at the school child's comprehension of teacher directives. Bates predicts that preoperational children should respond appropriately to clear directives providing both physical and social contexts are made salient. During the concrete operational period children might be expected to respond appropriately to directives with neither agent nor action mentioned. The objects or activities must be physically present and possible but they need not be made salient. The child during this period presumably can manipulate concrete entities in logical ways and his/her preference for concrete representations should become manifest even without teacher intervention. However, social norms, being more arbitrary and abstract, must be directly presented to the child.

By the early period of formal operations it might be expected that children could utilize both norms and concrete physical aspects of the context in order to disambiguate teacher utterances. Furthermore the child should have developed the necessary classification skills, logical inferencing ability, role-taking and communication ability to enable him/her to select and classify the necessary aspects of the linguistic, physical and social context and apply them appropriately in classroom interaction. These results provide data which tend to support the extended Bates model.

5½ year old children performed relatively poorly on all directives comprehension tasks except those of high clarity and high context. It

appears that for these, presumably preoperational, children all essential propositional information must usually be present in the utterance. In addition, both physical and norm contexts must be present and made salient. At this level the child is presumed to deal immaturely with concepts requiring inference, role-taking ability, and communicative accuracy.

Seven and a half year olds, assumed to be entering what Piaget and his associates term the "concrete" operational period, were found to perform dramatically better than 5½ year olds even when propositional content was ellided from the utterance. However, for this age child both concrete physical and social norms still provided a great deal of interpretive assistance when made specifically salient.

The picture for fourth and sixth graders was considerably more complex, and this might be expected if the thought processes of 9½ and 11½ year olds are assumed to be more complex than those of younger children. The order of improvement in performance for younger pupils with respect to context condition was essentially linear: directives under low context conditons were the most difficult to comprehend followed by directives under explicit physical context, followed by norm context, then high context. For 9½ year olds, however, there was a decrement in performance under the norm context and a subsequent improvement under the high context condition; while for 11½ year olds the utility of physical and norm contexts is reversed. Thus there was an interaction between age level and context condition. Differential clarity was also involved in the interaction which was most pronounced for unclear directives, somewhat pronounced for middle clarity and almost negligible for clear directives.

One possible explanation for the interaction between context level and age level involves considering probable developmental differences

between 9½ year olds and 11½ year olds. Nine year olds may be less able to operate on abstract concepts such as classroom norms, and more able to operate on concrete entities such as the physical context surrounding an utterance. Eleven year olds should be able to utilize the physical context but these details of the scene may be less interesting to them and less useful as they apply relatively sophisticated thinking skills to a discrepant event. The findings of the present investigation are provocative in suggesting that different thinking strategies may be utilized by different age groups when attempting to interpret teacher directives.

The pattern of means obtained for each variable provides further evidence for cognitive differentiation in directives comprehension. In general no difficult comprehension task was performed if its easier counterpart was not, for all age groups. The finding suggests that a good deal of misinterpretation might occur when teacher directives are unclear or when supporting contextual information is not salient to children. Recent observational studies provide data that supports the present findings (Shapiro, 1978; 1979; and forthcoming). Inappropriate responding occurs more often in lower grades and when teacher directives are unclear. However, these studies also found that both teachers and pupils have means of insuring appropriate responses. For example, teachers provide a great deal of redundancy for younger children, for children preceived as less able, and more at the beginning of the school year relative to the end. Children can utilize various clarification behaviors, but these are more frequent for older pupils and for younger pupils later in the school year. Both teachers and pupils establish stable interaction patterns which probably provide stability and predictability for behavior of all participants. Within such a setting the clarity of individual directives, or the context to

which the child directs his/her attention may not be as crucial in predicting performance as they apparently are under laboratory control. However, these findings do suggest to educators and psychologists that a child's failure to respond appropriately to a teacher's directive may be the result of the interaction of variables within the utterance, within the context and within the child; a possibility when analyzing anecdotal records of child behaviors. Adults observing classroom interactions may be unaware of directive clarity since unclear directives are frequent in adult discourse (Clark & Haviland, 1977; Ervin-Tripp, 1976; Grice, 1967). Clark and Haviland (1977) for example, argue that adults are accustomed to filling in the gaps when information is ellided in natural conversations. Adult ability is automatic to the degree that they are not normally aware of the inherent ambiguity of most discourse.

This study provided evidence that children do not possess comprehension skills as sophisticated as those of adults. Therefore when evaluating a child's behavior with respect to teacher directives, educators and psychologists should consider the clarity of the directive and the salience of the supporting context.

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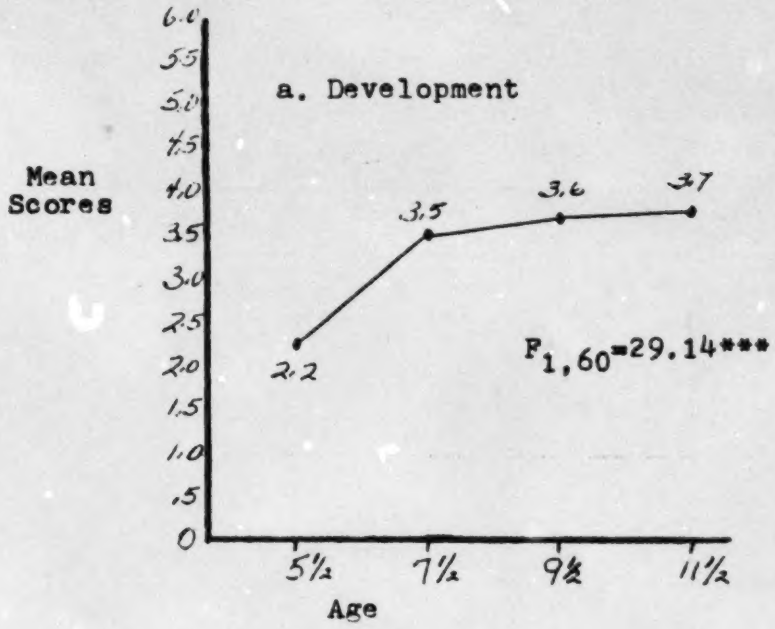
Table 1 - Cell means within age, context, and clarity.

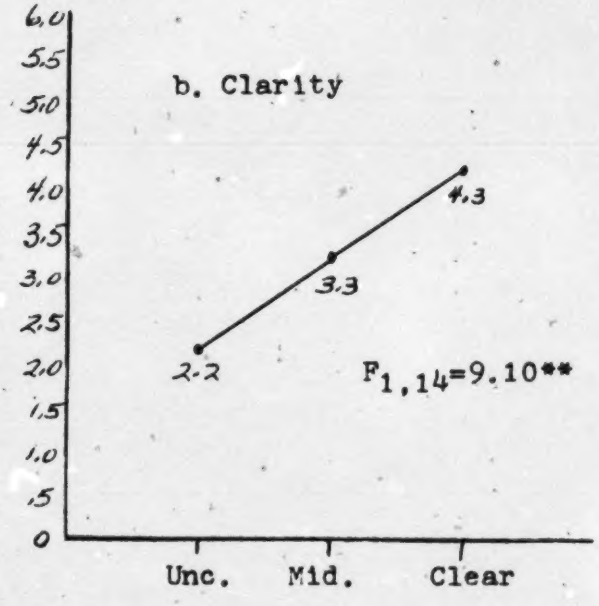
| Age | Context Condition | Unclear Directives | Middle Clarity Directives | Clear Directives |
|---|---|---|---|---|
| 5½ | LC | 1.00 | 1.00 | 1.75 |
| | EP | .50 | 2.75 | 2.00 |
| | EN | 2.00 | 2.75 | 4.00 |
| | HC | 1.50 | 2.25 | 4.00 |
| 7½ | LC | 1.00 | 3.75 | 4.25 |
| | EP | 2.25 | 4.50 | 4.75 |
| | EN | 2.75 | 4.50 | 4.25 |
| | HC | 2.75 | 2.75 | 5.00 |
| 9½ | LC | .50 | 2.25 | 4.00 |
| | EP | 2.75 | 4.50 | 5.75 |
| | EN | 1.75 | 3.00 | 4.00 |
| | HC | 4.50 | 4.50 | 5.25 |
| 11½ | LC | 1.75 | 2.25 | 5.25 |
| | EP | 2.25 | 3.00 | 4.50 |
| | EN | 3.50 | 4.25 | 5.00 |
| | HC | 4.00 | 4.25 | 5.25 |

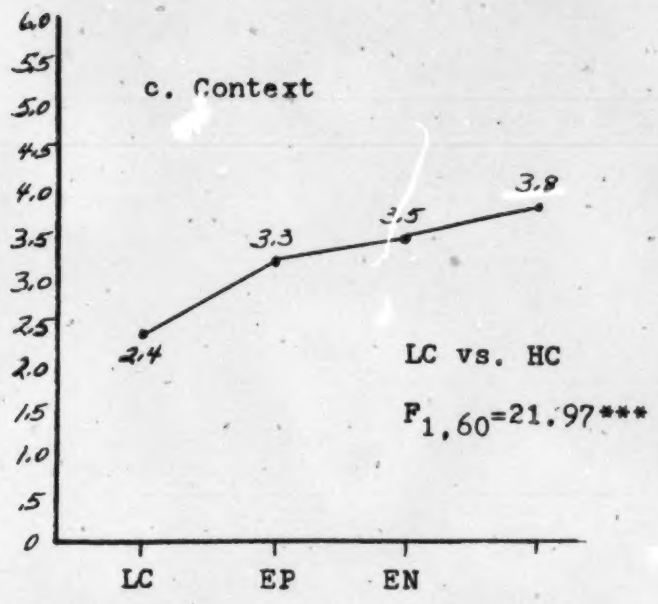
Table 2 - Comprehension pattern. Plus sign indicates means of 3.5 or greater.

| Age | Context Condition | Unclear | Middle | Clear |
|---|---|---|---|---|
| 5½ | LC | | | |
| | EP | | | |
| | EN | | | + |
| | HC | | | + |
| 7½ | LC | | + | + |
| | EP | | + | + |
| | EN | | + | + |
| | HC | | | + |
| 9½ | LC | | | + |
| | EP | | + | + |
| | EN | | | + |
| | HC | + | + | + |
| 11½ | LC | | | + |
| | EP | | | + |
| | EN | + | + | + |
| | HC | + | + | + |

Figure 1 - Simple effects: Development (indexed by age), clarity, and context.




**p/.01, ***p/.001

Table 3 - Planned comparison contrast results.

a. Three main contrasts with respect to two dependent variables: $Y_1$ and $Y_2$. $Y_1$ denotes total score for all three levels of clarity. $Y_2$ denotes a difference score computed by subtracting Ss low clarity scores from high clarity scores. Since coefficients representing this dependent variable are given by +1, 0, -1; then these contrasts just test whether the linear trend for clarity if affected by changes in age or context condition. No such effects were found.

| | $Y_1$ | | $Y_2$ | |
|---|---|---|---|---|
| | r Value | F value | r Value | F value |
| Contrast 1: | | | | |
| Simple age effects | .498 | 29.14*** | .049 | ns |
| Contrast 2: | | | | |
| Simple context effects | .432 | 21.97*** | -.030 | ns |
| Contrast 3: | | | | |
| Age X context interaction | .209 | 5.17* | -.085 | ns |

All contrasts in this set were evaluated with 1 and 60 degrees of freedom. Contrast 1 tested a linear and quadratic trend for age. Contrast 2 tested whether Ss scores in the high context condition were significantly greater than scores in the low context condition. Contrast 3 tested whether 9½ year olds & 11½ year olds differed equally in the use they made of the two middle levels of context.

b. Additional contrast for clarity effects. Clarity constituted the repeated measures factor. The dependent variable was group means at each level of clarity. Therefore groups, rather than individuals, was the unit of analysis. This contrast tested a linear trend for clarity and was evaluated with 1 and 14 degrees of freedom.

| Contrast: | r Value | F value |
|---|---|---|
| Simple clarity effects | .628 | 9.10** |

* $p < .05$; ** $p < .01$; *** $p < .001$

Figure 2 - Mean performance for context condition within age levels across clarity levels.

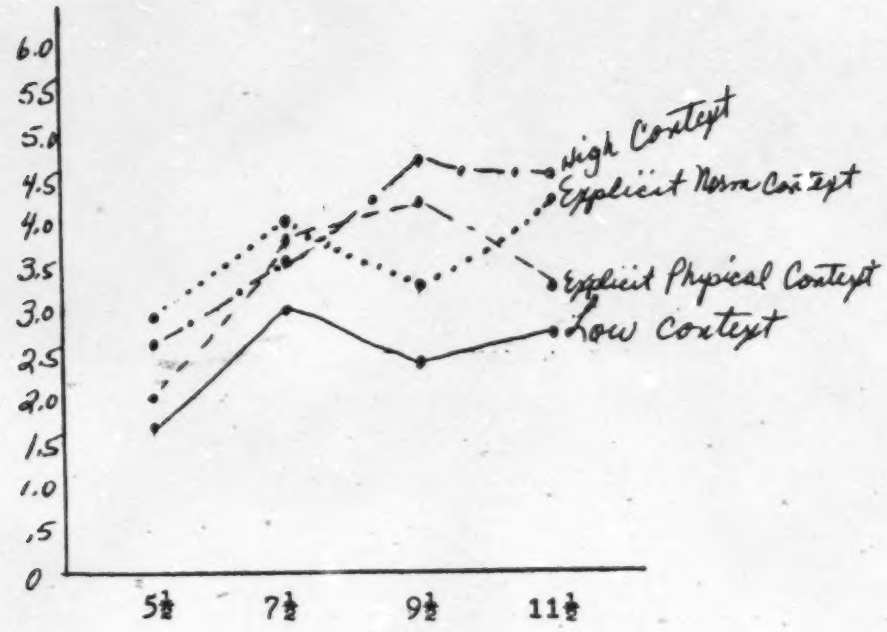
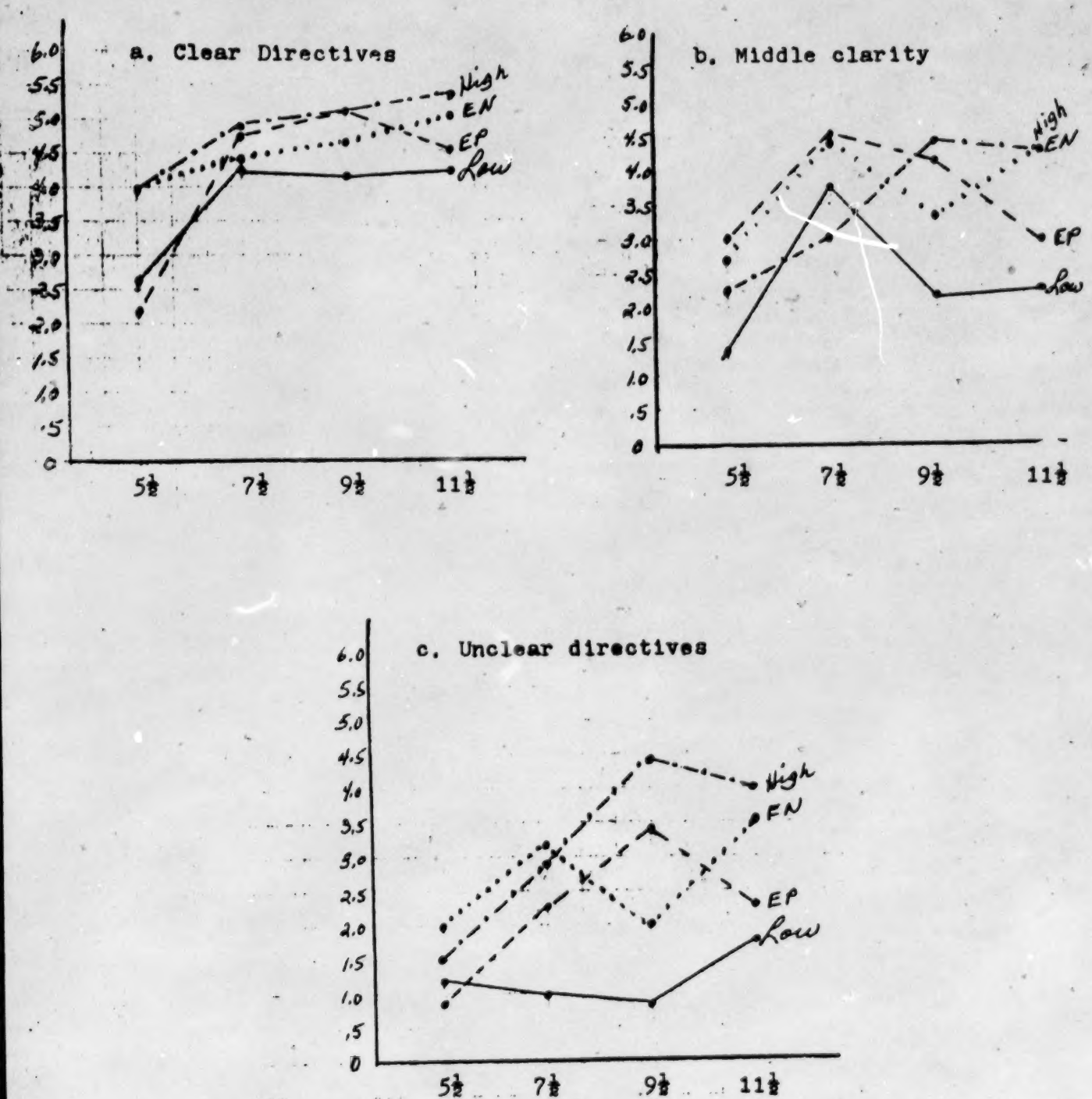


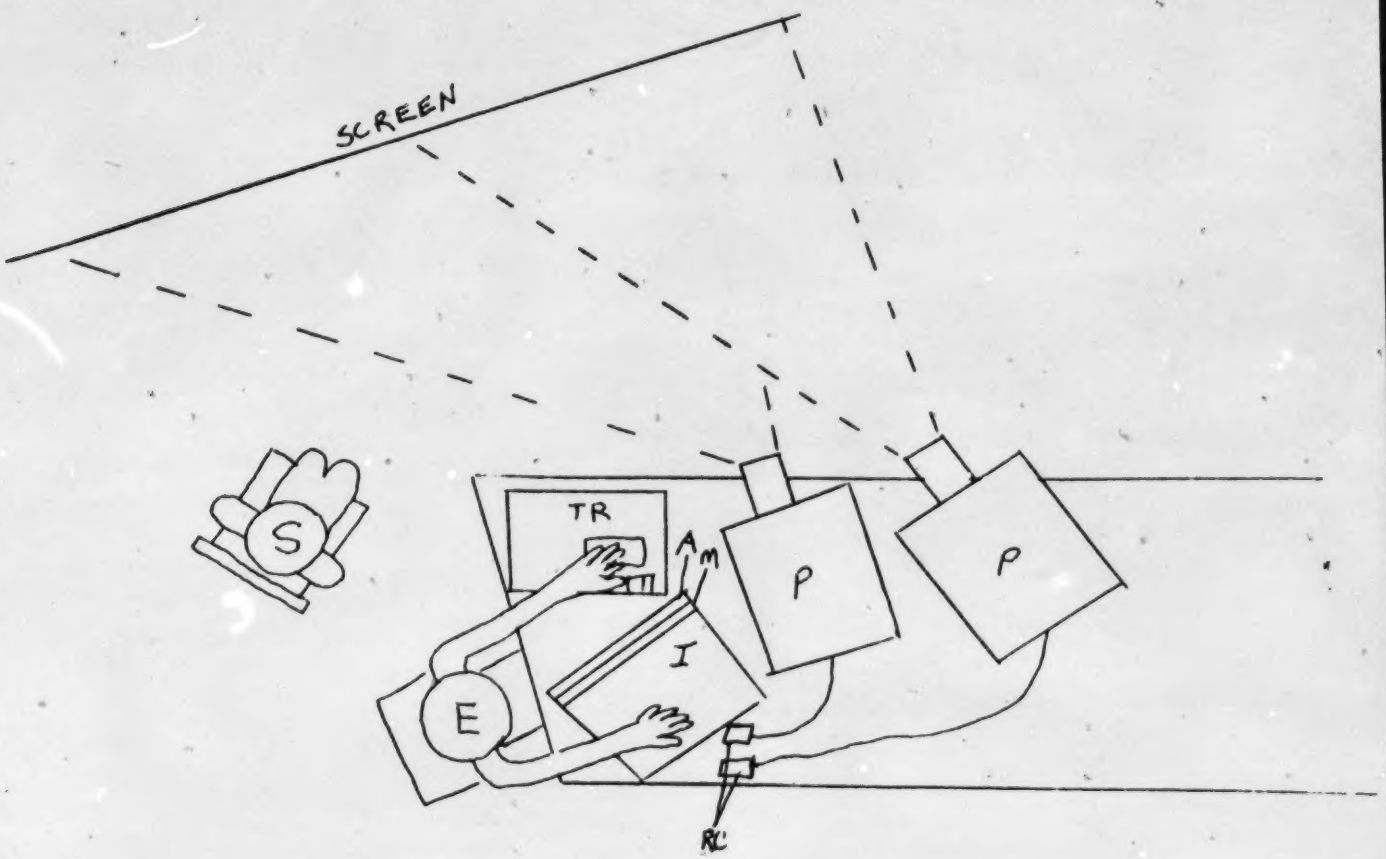
Figure 3 - Mean performance for context condition within age groups for each of three levels of clarity.



## APPENDIX

Diagram of experimental setting for directives comprehension tasks.

(Experiment took place in a windowless room enabling enough darkness to permit excellent clarity for projected color slides. When lights were extinguished enough light entered through a transom above the door to permit the examiner to see the written material.)




S - Subject

E - Examiner

A - Answer sheet

M - Model answers

I - Instructions

TR - Tape recorder

P - Slide projectors

RC - Remote control switches

Specimen List of Directives for Directives Comprehension Tasks-Study I

List 1

Training item #1
Who knows this word?

Training item #2
Can you read that?

1. Who knows what day of the week it is? (1)*
2. Jessica, would you please! (2)
3. As soon as you get your paper put your name on it. (1)
4. That doesn't look like a circle to me. (1)
5. Do you want to tell us about the lion? (3)
6. Boys and girls, you have to be quiet over there. (2)
7. Susan Smith, come over here with your work. (3)
8. If you're talking Mrs. W's going to take your paper. (2)
9. We'll have to line up for recess now. (3)
10. I want everyone to go through the words with me. (2)
11. Try looking on the next page, there's a poem there. (2)
12. Why do you put a capital letter for Sally? (3)
13. Excuse me, John. We have many people in your group who are not ready. (1)
14. You are not going on to the next book until you shape up. You got that? (2)
15. Who has a blue coat? (1)
16. Don't we all help with the clean up? (3)
17. Boys, can you do this without any talking? (3)
18. See if you can find the box for the first Monday in May. (1)

*Figure in parentheses is the clarity level of the directive where 1=Unclear, 2=Middle clarity, and 3=Clear. Decisions about clarity were based on predetermined teacher intentions, non-verbal elements of the slides which accompanied each directive, and criteria adapted from Ervin-Tripp, 1976.

APPENDIX continued

Examples of verbal accompaniment at four levels of context for item #13 on List 1.

Low Context:

"John is in the light blue jacket. The teacher says..."

Explicit Physical Context:

"John is in the light blue jacket. He is the line leader for recess. The teacher says..."

Explicit Norm Context:

"John is in the light blue jacket. At recess the children line up quietly behind the line leader. The teacher says..."

High Context:

"John is in the light blue jacket. He is the line leader for recess. At recess the children line up quietly behind the line leader. The teacher says..."